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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/641,013	08/15/2003	Masaya Iwamoto	OKI.564	8882
20987	7590	10/11/2006		
VOLENTINE FRANCOS, & WHITT PLLC ONE FREEDOM SQUARE 11951 FREEDOM DRIVE SUITE 1260 RESTON, VA 20190				
			EXAMINER NGUYEN, NGOC YEN M	
			ART UNIT 1754	PAPER NUMBER

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/641,013

Applicant(s)

IWAMOTO, MASAYA

Examiner

Ngoc-Yen M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,10-12 and 14-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,10-12 and 14-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 10-12, 14-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Safi (5,681,470) in view of Shiba (6,423,534).

Safi '470 discloses a method for the biodegradation treatment of a gaseous medium polluted with volatile organic solvents to produce a purified gaseous medium and a separate methane-rich and combustible gas, said method comprising the steps of:

(a) wet-scrubbing said gaseous medium with a liquid stream in a countercurrent wet scrubber to produce a purified gaseous medium and a separate liquid stream loaded with said volatile organic solvents;

(b) flowing said liquid stream loaded with the volatile organic solvents to an anaerobic bioreactor consisting of a sealed vessel containing a biomass having methanogenic bacteria adapted to transform the volatile organic solvents into said methane-rich and combustible gas and a separate liquid stream output substantially free of the volatile organic solvents;

(c) recovering said methane-rich and combustible gas by collecting said gas from said anaerobic bioreactor (note claim 1).

Since the liquid stream used in Safi '470 is preferred to be an aqueous solution (note "water scrubber 10", column 3, lines 29-30), the bacteria in the bioreactor would have been "aquatic microbes".

For the limitation of "filter medium supporting bacteria", it would have been obvious to one of ordinary skill in the art to use any means to promote the contact between the liquid to be treated and the bacteria. Without a showing of criticality or unexpected results, the use of the such "filter medium" is not seen as a patentable difference.

Safi '470 further discloses that a buffer tank 12 is provided and is connected to the fluid transportation lines between the wet scrubber 10 and the anaerobic bioreactor 14 to allow a blending of said liquid stream loaded with the volatile organic solvents to provide a blended output stream thereby avoiding sharp peaks or drops in concentration of volatile organic solvents flowed to said anaerobic bioreactor (note column 4, lines 21-28). Various nutrients and trace heavy metals can be added to tank 12 to optimize the growth of the acidogenic and acetogenic bacteria. These bacteria partially convert the solubilized VOCs to organic acids including acetic, propionic and butyric acids (note column 4, lines 446-50). This fairly suggests that the presence of bacteria in the buffer tank, and the liquid in the buffer tank is considered as the "carriers" supporting bacteria.

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For the actual type of bacteria, it would have been obvious to one of ordinary skill in the use to select any type of bacteria for the process of Safi '470 as long as such bacteria can decompose the VOCs solubilized in the liquid.

Safi '470 does not teach the step of contacting the treated exhaust gas with an active carbon.

Shiba '534 discloses a method for eliminating ethanol in exhaust gas (note claim 1). Shiba '534 further discloses that it is known in the art to remove ethanol from an exhaust gas by adsorption on activated carbon (note column 1, lines 32-34). Also, it is also known to remove ethanol from the exhaust gas by using a combination of activated carbon and a source of microorganism (note column 2, lines 28-37).

Since the treated exhaust gas as disclosed in Safi '470 still contains some unremoved ethanol among other organic compounds (note Tables V), it would have been obvious to one ordinary skill in the art at the time the invention was made to further remove ethanol from the treated exhaust gas of Safi '440 by contacting it with an activated carbon, as suggested by Shiba '534.

Applicant's arguments with respect to claims 1-3, 5, 10-12, 14-22 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

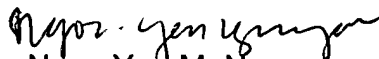
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stanley Silverman can be reached on (571) 272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 or (571) 273-8300.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed (571) 272-1700.


Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
October 2, 2006